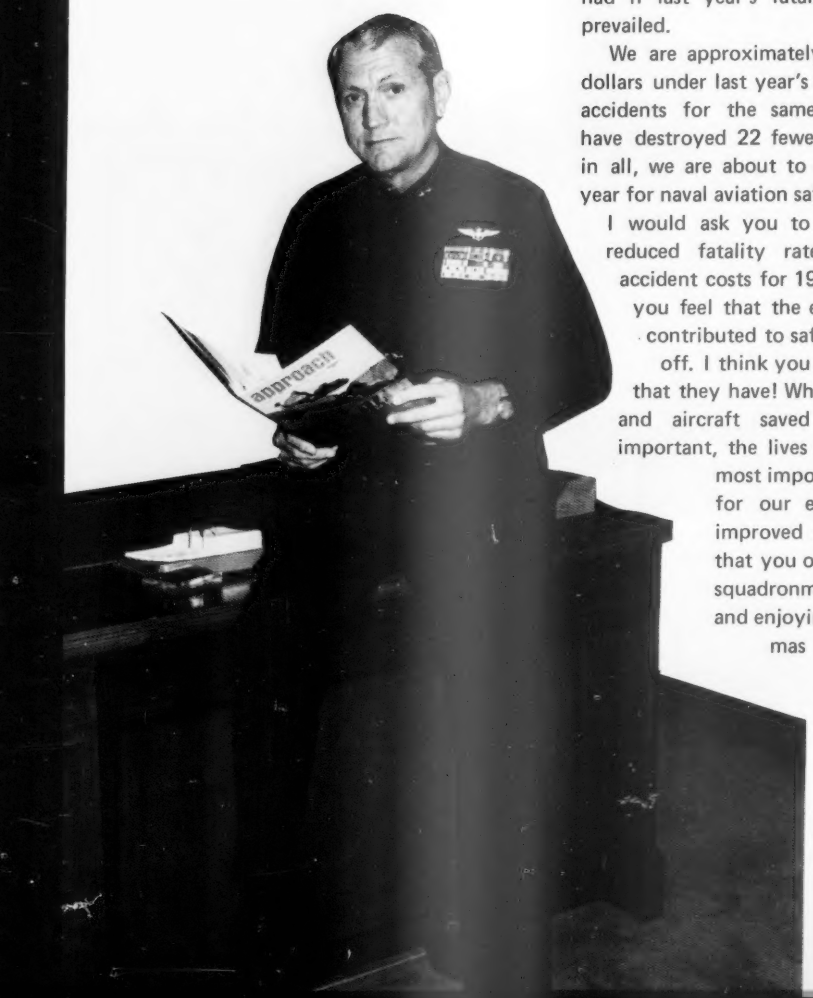
approach

DECEMBER 1979 THE NAVAL AVIATION SAFETY REVIEW

A Holiday Greeting from Commander, Naval Safety Center



I WOULD like to express my sincere appreciation to all of you in the naval aviation community for your efforts in lowering the accident and fatality rate for 1979. For the first time in many years, we have a good chance of meeting the CNO-established goal of .58 for our major accident rate.

As of 7 November 1979, we have had 49 fatalities in naval aviation this calendar year compared to 124 fatalities in the same period last year. If statistical trends hold, we will have about 70 more people alive for the holidays this year than we would have had if last year's fatality rates had prevailed.

We are approximately 190 million dollars under last year's cost of major accidents for the same period, and have destroyed 22 fewer aircraft. All in all, we are about to end a banner year for naval aviation safety.

I would ask you to consider the reduced fatality rate and lower accident costs for 1979, and see if you feel that the efforts you've contributed to safety have paid off. I think you can easily see that they have! While the dollars and aircraft saved are indeed important, the lives saved are the most important rewards for our efforts. When improved safety means that you or one of your squadronmates is alive and enjoying the Christmas season, you can understand its true importance.

I would also ask you to spend a few moments of your holiday thinking about what you will do to make 1980 an even safer year. Reflect back on the events of 1979 and see if there are areas you can improve upon; times when you made yourself or your squadronmates unnecessarily vulnerable to an accident. Only by identifying your weak spots, and resolving to change them, can you look forward to an even better year in 1980.

May you enjoy a pleasant and safe holiday season. We have nearly completed the finest year of naval aviation safety in history, and each of you should be duly proud of your contribution.

W. B. WARWICK
Rear Admiral
United States Navy

Vol. 25 No. 6

approach

NAVAIR 00-75-510

This month's cover of a Navy C-9 Skymaster was painted specifically for APPROACH by Mr. R. G. Smith of McDonnell Douglas Corporation.

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PRIVILEGED TESTIMONY

ONE of the unique aspects of the naval aviation safety program is the use of privileged testimony. The compromise of privileged testimony can be detrimental to naval aviation safety; it therefore benefits all members of the naval aviation community to understand the proper use and potential for misuse of this information. This article is intended to assist in that regard. The article is essentially a restatement of material contained in OPNAVINST 3750.6L (*Naval Aircraft Mishap Reporting Procedures).*

IN THE NAVAL AVIATION SAFETY PROGRAM

Why Privileged Testimony? The primary purpose of naval aircraft mishap investigations is to determine mishap cause factors and thereby derive information which can be used as a basis for corrective action to prevent future mishaps. To this end, concentrated effort is made to obtain statements from all individuals who can shed light on any of the cause factors of the mishap. But what an individual knows may significantly differ from what he is willing to reveal. For example, an individual involved in a mishap might withhold certain important evidence by invoking his constitutional right to avoid self-incrimination. A technical representative of the aircraft industry might withhold information which indicates fault in one of his company products.

How Is the Testimony Obtained? To overcome the reluctance of an individual to reveal complete and candid information pertaining to the circumstances surrounding a mishap, his or her statement (oral or written) is taken under the following conditions:

- Witnesses shall not testify under oath.
- Witnesses shall be advised that their testimony will not be used by:
  - administrative boards
  - investigations
  - court-martial or nonjudicial punishment
  - in any other punitive or administrative action taken by the Department of the Navy or its representatives.

In addition, the following is read and explained to each witness prior to taking his or her statement:

> "It is particularly pertinent to note that aircraft accident, incident, ground accident, ground incident, and special aircraft investigation reports can be used ONLY for analysis and statistical studies, for the prevention of aircraft mishaps. *They are, therefore, deemed privileged documents.* As such, they cannot be used as evidence, or to obtain evidence in determining the misconduct or line of duty status of killed or injured personnel; as evidence to determine the responsibility of personnel from the standpoint of discipline; as evidence to determine the liability of the government for property damage caused by such mishap; as evidence before such administrative bodies as Naval Aviator/Naval Flight Officer Evaluation Boards (USN) or Field Flight Performance Boards (USMC); or in making any other determination affecting the interests of the individual making a statement under assurances of confidentiality."

At this point, the witness has been advised that the mishap report incorporating his testimony can be used ONLY for analysis and statistical studies for the prevention of aircraft mishaps. Even though this might have been sufficient to allay his apprehension, he has also been advised of **some** of the **prohibited** uses of mishap reports. If the witness now makes a statement, privileged testimony is created.

What Becomes of the Testimony? The information provided in privileged testimony cannot be uniquely labeled as such, and it cannot, therefore, be differentiated from other kinds of information in a mishap report. In fact, it becomes inextricably woven into the fabric of the report. The whole report must therefore be treated as privileged, and this status applies to all mishap reports (incidents, ground incidents, ground accidents, and aircraft accidents) including their enclosures, endorsements, and extracts (see Fig. 1). A PMH (Pilot Mishap History) is an example

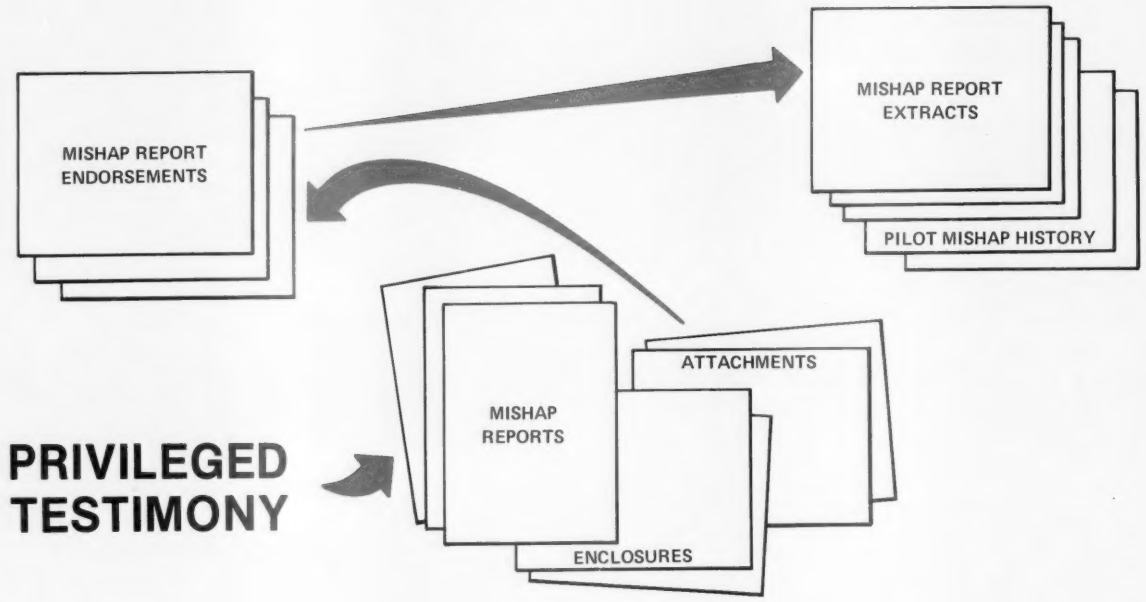

Fig. 1

of an extract from mishap reports. Change 2 to OPNAVINST 3750.6L recently clarified the privileged status of PMHs.

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Why Protect Privileged Testimony? We now have three links of a continuous, four-link chain (see Fig. 2): we have made a promise in order to get information; a witness has provided privileged testimony; and we have a useful mishap report. In order to perpetuate the sequence, however, the promise must be kept. Should faith be breeched with those who have provided statements in return for an assurance of privilege, credible assurances of confidentiality could no longer be offered, and the entire loop would be

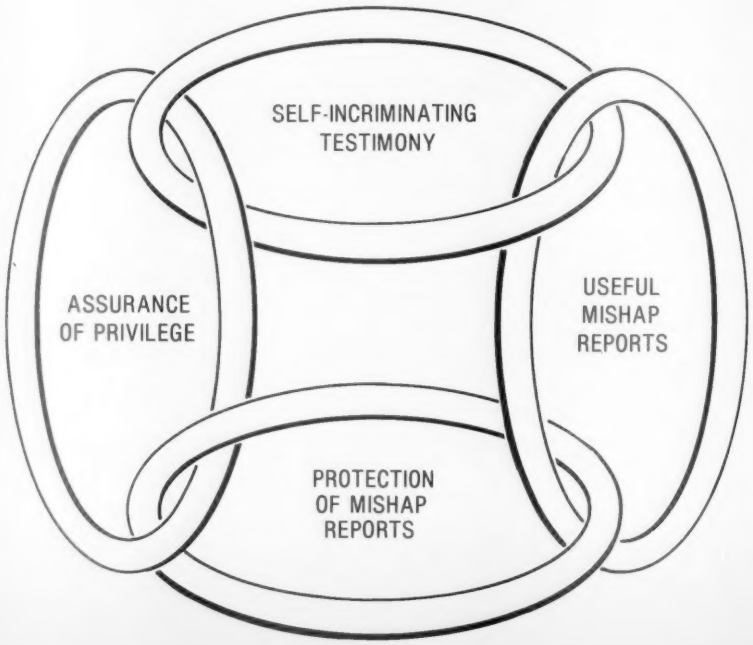


Fig. 2

destroyed, including the reason for its existence – a useful mishap report.

How Is the Testimony Protected? Let us examine the safeguards established for protection of privileged testimony:

The Testimony Itself. The testimony itself (as opposed to the information transferred from the witness' statement into the mishap report) may only be disclosed to those persons within the Department of the Navy whose duties involving accident prevention require it, and to those persons outside the Department of the Navy who are authorized to participate in the investigation.

Investigations. Clear distinctions are made between aircraft mishap investigations and other investigations, such as special weapons mishap investigations, and, particularly, JAG Manual investigations. Rules are established concerning the relationships between these investigations. Privileged information collected in an aircraft mishap investigation is thereby kept separate from information collected in other investigations.

Investigators. Members of the AMB (Aircraft Mishap Board) are prohibited from assignment as members of a JAG investigation, NA/NFO evaluation board, or field flight performance board. Thus, the knowledge these individuals may have of privileged testimony is kept separate from those proceedings. Should a member of an AMB be asked to testify for a JAG investigation, or at an NA/NFO evaluation board or field flight performance board, it is obvious that he cannot relate any privileged information which he learned as a member of the aircraft mishap board without violating the assurance of privilege.

Independence of Mishap Reports. To ensure the separation of disciplinary action and evaluation boards from mishap reports, mishap reports and endorsements do not contain references to disciplinary action or the various types of aircrew "green table" boards. Neither is the Office of the JAG an addressee for mishap reports or endorsements. These restrictions are in addition to the direct prohibition against the use of privileged information for legal or evaluation board purposes, which is mentioned in the advice to witnesses.

Release of Mishap Information. Release of mishap information is becoming a more sensitive matter in light of the Freedom of Information Act and the Privacy Act. Requests based on these acts are handled by the Naval Safety Center. Information released in response to requests based on these acts carefully avoids violation of the safeguards for privileged information.

The Privacy Act requires that a file of information pertaining to one individual, such as a Pilot Mishap History, must be released to that individual upon his or her request. The Naval Safety Center complies with such requests, but releases the history **only** to the individual concerned. No one may be required to obtain, release, or cause the release of his or her Pilot Mishap History.

Information released to news media must not be based on reports in which there is provision for privileged information. Even releases based on nonprivileged sources are restricted from including certain information which might imply a compromise of privileged information. Instructions contain the further caution: " . . . it is essential to preserve the privileged status of those mishap reports that utilize confidential statements in their preparation."

The Chief of Naval Operations reserves the prerogative to respond to requests for mishap information from the Congress. The Judge Advocate General, Department of the Navy, handles requests for information related to litigation and claims.

Exchanges of mishap information among the military services is limited to respective safety centers, and are controlled by them to prevent compromise of privileged information.

Administrative Safeguards. Distribution of mishap reports is restricted to specified activities. Distribution, including readdressal of message reports to other persons or activities, is strictly controlled.

Administrative instructions require that the following statement be typed, stamped, or printed on all reports, documents, and pertinent correspondence prepared for the prevention of aircraft mishaps: "SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAVINST 3750.6L." Summary message reports, and subsequent message endorsements, are *also* required to carry the following terminology: "THIS IS A LIMITED USE MISHAP REPORT (OPNAVINST 3750.6L REFERS)."

Criteria for Misuse. If a mishap report, or extract therefrom, is used for some purpose other than an analysis or statistical study for the prevention of aircraft mishaps, this constitutes **misuse.** If the information is being used in making some determination involving an individual who provided testimony to an AMB, the misuse is **flagrant.**

Summary. Privileged testimony can be most valuable in the determination of mishap causes when success is least likely – in those cases where a fruitful investigation is dependent on information an individual is most prone to withhold. The key to preservation of this valuable safety tool is the diligent protection of privileged testimony.

APPROACH (USPS 016-510) is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription price is $15.00 per year; $3.75 additional for foreign mailing. Subscription requests should be directed to: Superintendent of Documents, Government Printing Office, Washington, DC 20402. Controlled circulation postage paid at Norfolk, VA.

SNOWBLIND!

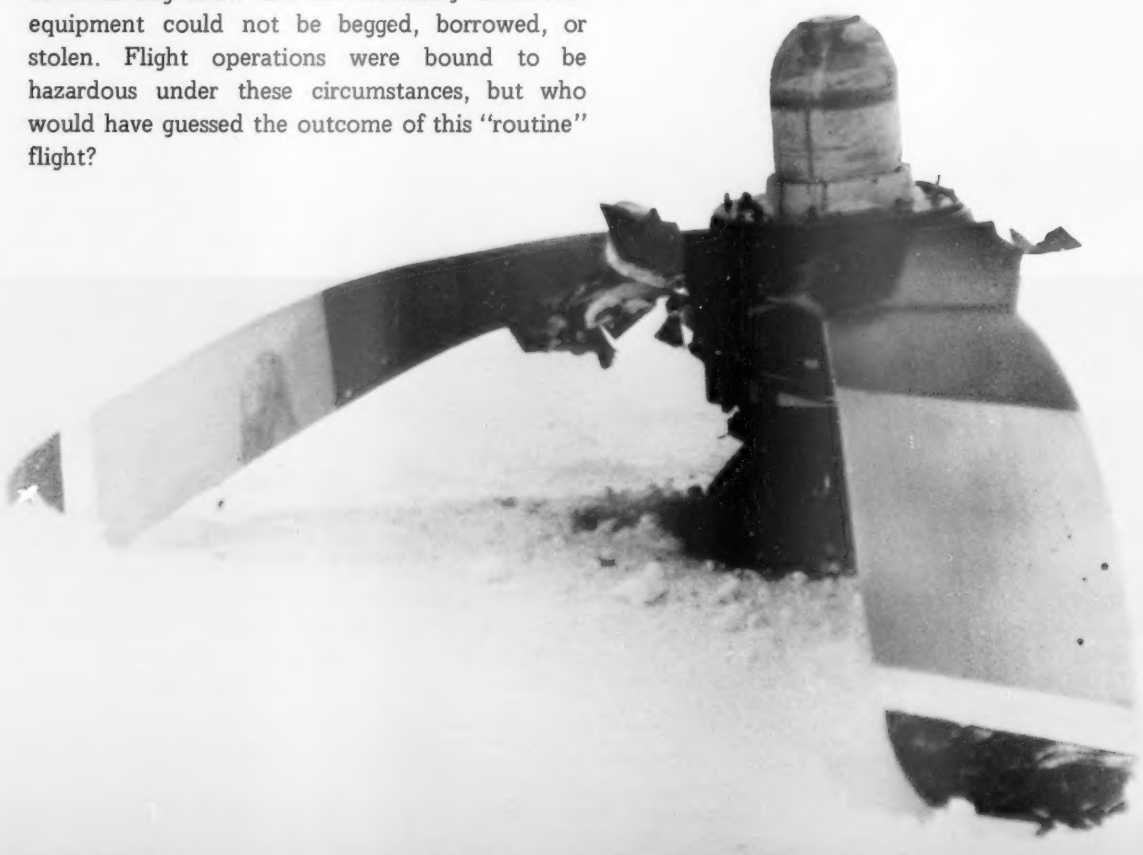
By LT John W. Weldon
VP-90 Safety Officer

Heaven knows the winter of '79 was an extenuating circumstance. No one could have anticipated such consistently severe weather or the dramatic snowfall that overwhelmed the snow removal efforts of the world's busiest airport, let alone those of a relatively quiet reserve naval air station. Frankly, even a high-priority operation could not have effectively cleared taxiways and ramp areas when the runways were constantly accumulating snow and the necessary additional equipment could not be begged, borrowed, or stolen. Flight operations were bound to be hazardous under these circumstances, but who would have guessed the outcome of this "routine" flight?

THE P-3 taxied clear of the active after a harrowing GCA and an unanticipated RON away from NAS Midwest due to severe local weather. Happy to be safely on deck, the crew completed the after landing checklist and taxied to the VP ramp, using all four engines to aid in directional control on the snow- and ice-covered taxiways. Approaching a throat area, the PPC noticed the reduced visibility and lack of depth perception resulting from a combination of fresh snow and grey light conditions. But, having encountered no taxi difficulties thus far, he continued to the parking spot via his accustomed route. No taxi director was dispatched or requested at this point, in accordance with the prevailing *habit pattern.*

During the ensuing taxi, between a snowbank on the port side and a parked aircraft to starboard, the aircraft suddenly lurched to port as if the nosewheel had fallen into a rut. The PPC, sitting in the left seat, realized that the No. 1 prop was in the snowbank, called for the feather of No. 1 in accordance with NATOPS, and proceeded to pull the E-handle himself.

As No. 1 started into feather, the propeller and gearbox separated from the engine mount and spun into the No. 2 nacelle, causing the subsequent departure of the No. 2 propeller and gearbox from its mounting. The No. 1 prop



continued its deadly freeflight, gashing the aircraft fuselage just forward of the unoccupied radio operator's station and smashing the flight station overhead hatch violently inward, before coming to rest some 100 feet starboard.

The No. 2 prop threw a blade through the entire fuselage, just aft of the radio compartment, as it tumbled into the snowbank forward of the port wing. The No. 1 nacelle caught fire.

Unsure of the exact nature and extent of the damage, the flightcrew secured the remaining three engines, experiencing great difficulty in pulling the No. 2 E-handle, which appeared jammed. Spotting a crewman injured by the fallen overhead hatch, the PPC transmitted a distress call prior to the actual shutdown of No. 2 and ordered the flight station to evacuate the aircraft. Specific egress instructions were never passed over the PA system.

In the absence of specific egress instructions, the aft observer decided to open the main cabin door and lower the ladder, in hopes of expediting the removal of injured personnel. With main-cabin-door egress in progress, the flight station crew commenced evacuation, assisting the injured and still dazed crewman, and exited down the ladder behind the burning (unbeknownst to them) No. 1 engine. Well in advance of the pilot's distress call, alert Tower personnel had dispatched the station crash crew, which arrived rapidly on the scene and extinguished the fire.

Extenuating circumstances? Most certainly! As the snow had accumulated at NAS Midwest, the snow removal team had plowed it into larger and larger snowbanks, which eventually began to encroach onto the normal taxi area. Due to the snow and ice cover, no taxi lines or parking spots were visible, nor were the snowbanks marked in any manner. And, of course, the fresh snow and grey light didn't help.

But, consider the more subtle and insidious factors contributing to this unfortunate mishap:

- The pilots and crew were delighted to be home after a difficult approach and landing. Did they let down their guard after rollout?
- The crewmembers had not flown together previously, yet failed to brief thoroughly prior to the ground taxi evolution.
- The crew chose to continue taxi and failed to request a tow even in the face of recognized hazardous conditions. They also failed to post aft observers or request the assistance of a lineman.
- In the confusion of the flight station, the PPC did not call for or execute any emergency secure checklist, resulting in the crew's slow and disorganized egress on the side of a burning engine.
- No one at NAS Midwest had seriously considered shutting down flight operations due to poor conditions on the ramps and taxiways . . . it was the condition of the runway which was considered crucial.

How would you have reacted to the above scenario? When would you have called a stop to or altered this chain of events? Rumors in the Midwest these days say that the winter of '80 is going to be worse . . . don't you get caught SNOWBLIND!

THANKFUL

LCDR Billy C. Boatright and his RIO, LT Leonard A. Snead III, launched in their F-14 on a routine air intercept flight. They and their playmate were going to perform a low-to-high supersonic intercept.

Shortly after leaving the carrier, both aircraft tanked and began the exercise. On initial intercept, LCDR Boatright commenced a climb. Passing 15,000 feet, zone 5 afterburner was selected, and about 15 seconds later, a thump/bang was heard and felt by the crew. The starboard engine firewarning light came on immediately, and a right yaw was experienced. The fuel shutoff handle was pulled, throttle was selected off, fire extinguisher button was depressed, and air source was selected.

An immediate descent and return to the ship was begun. The carrier, USS EISENHOWER, was preparing for another launch, but when notified of the problem and when an immediate landing was requested, a ready deck was made available within 5 minutes.

The fact that the aircraft was burning prevented the pilot from dumping fuel. LCDR Boatright set up at 1200 feet for a 3-mile, straight-in approach. At about one-half mile on final, numerous caution and advisory lights on the front cockpit telegraph panel illuminated. LCDR Boatright continued his single-engine approach and completed a No. 2 wire arrestment.

Within seconds, as the photos show, the flight deck firefighters were on the scene and quickly extinguished the flames in the starboard nozzle area.

Two days later, USS EISENHOWER's *The Daily Bulletin* contained the following story:

NOTE OF THANKS "We, the pilot and radar intercept officer of Taproom 103, would like to express our gratitude to the men of IKE for the truly outstanding job that was done in expeditiously recovering our aircraft after it suffered an inflight fire on 15 March.

"When we relayed the problem to the ship we were told it would take 6 to 7 minutes to get the deck ready. We landed less than 5 minutes after that word – a truly superhuman effort on the part of all concerned. Postlanding analysis of the aircraft showed that its remaining flying time was probably measured in seconds, so your efforts saved a valuable aircraft for the Navy.

"More important, particularly to us, is the fact that your efforts quite possibly saved our lives. Words cannot express our appreciation for that. Let us just say thank you to everyone: to the guys down in engineering who 'turned up the wick' to get the speed we needed to land; to the men on the flight deck who resorted to pushing aircraft by hand to clear the landing area; to the crash crew that was hosing us with fog foam before we even stopped rolling; and everyone else. Thanks for a job very well done. We are proud and thankful to have shipmates like you."

– Billy Boatright
and Alex Snead

APPROACH salutes the F-14 crew and all hands aboard USS EISENHOWER. Well done.

Are You Ready?

By LT Robert H. Keepper
VS-21

READY for whatever may happen each time you salute the catapult officer or start your takeoff roll? Recently, one pilot was given a chance to reexamine his readiness. Often, though, we are only given one chance and we cannot afford to come up wanting.

It was the type of night that every carrier aviator dreads, pitch black and no visible horizon. It was the culmination of a long line period and everyone was growing weary. The pilot had manned his aircraft, and no difficulties were experienced prior to taking the cat. The S-3 was heavy, with full droptanks and a heavy sonobuoy load. The throttles were advanced as tension was taken. All indications were normal, and the external lights were turned on. The catapult officer touched the deck with his wand, and the deck-edge operator reached for the fire button to launch the aircraft when, suddenly, there was a loud explosion and a ball of fire bellowed from the tailpipe of the port engine.

The pilot had just experienced a catastrophic failure of an engine, which was later blamed on FOD. The catapult was suspended and this pilot had a second chance. Afterwards, in the readyroom, he stated that his first reaction would have been to eject, had the catapult fired. Later, after reexamination, he asked "Why?" The aircraft most certainly would have flown, his aviation skills would have been tested, but he would have made it! In retrospect, he was not really prepared.

We must be prepared for the worst and must know all of our aircraft's capabilities under all circumstances. Know your NATOPS so that you are capable of reacting in a timely, efficient, and correct manner. Know how **you** will react before **your** time comes. Afterwards is too late! The next time you salute the catapult officer or start your takeoff roll, ask yourself, "Am I ready?" I hope you are!

A BIG BUMP

Murphy's Law says: "If an aircraft part can be installed incorrectly, someone will install it that way." There are also many variations of Murphy's Law, one of which states: "If there is one dangerous spot on an airfield, a taxiing aircraft will find it."

AN instructor and student were scheduled for a flight which was to be a safe-for-solo check for the student. The briefing was completed on time; however, the aircraft assignment for the flight was slightly delayed. By the time the aircraft was assigned, the flight was a bit late in taxiing out.

The student taxied to the final checker, and when given a thumbs-up, the instructor took control and told the student to complete the takeoff checklist. After the checklist was completed, the student resumed control and continued taxiing. The trainer was headed for the left side of the taxiway, so the student straightened it out but continued taxiing in the left half of the taxiway.

The instructor told the student to call for takeoff clearance and the tower advised them to hold short. There was a slight incline to the hold-short position, and the student added a skosh of power. The instructor saw they were close to the left edge of the taxiway, and instead of tapping the right brake, told the student to come right. Too late!

The student allowed the port mainmount to roll off the taxiway, and a second later, it hit the edge of asphalt, blast-resistant pavement 14 inches high. (Big chock!) Had the aircraft left the taxiway at any other point on the field, there would have been no damage.

The port gear departed the taxiway at a point where the shoulder was depressed about 6 inches and the pavement was another 8 inches above that. When the aircraft hit the 14-inch obstruction, the force overstressed the port wing, causing skin tears, cracked and twisted wing panel structural members, and an immediate fuel leak.

The combination of the student diverting his attention within the cockpit (to change radio channels), as well as watching outside, caused a false visual image. He thought he had more taxiway than he did. He obviously did not maintain the proper position on the taxiway.

One questions the lack of action by the instructor. Why didn't he tap the brake when he knew they were too close to the edge? Telling a student to do something requires time for a reaction. There wasn't enough time. Of course the instructor could have counseled the student, when he resumed taxiing, to get into the middle of the taxiway. The instructor may have overloaded the neophyte, by having him review the checklist while they were moving, resume taxiing, and call for takeoff clearance, taking his mind off the primary task of taxiing the aircraft. The student had only nine previous flights. The instructor's failure to recognize an *extremis* situation and take corrective action was most likely due to complacency. ◄

Do it right!

12

A HELICOPTER crew was scheduled for a 3½-hour ASW training flight and assembled early for a thorough briefing. Among many items covered in the briefing was a discussion of single-engine operations.

After launch, the crew proceeded to the operations area, but had to abort an hour and a half later when sensor malfunctions occurred. The HAC then proceeded to Homeplate to conduct the briefed, secondary phase of flight.

The first couple of approaches and landings were completed to the runway. The pilots then alternated approaches and landings to a practice pad. The helicopter was not heavy and there was a light wind of 5-10 knots.

The HAC turned over the controls to the copilot to shoot the first single-engine approach and landing. His performance was satisfactory, except he was a little low and fast. The HAC called out the correct parameters and the copilot made the necessary corrections prior to touchdown. The copilot set up a level attitude just before touchdown.

The helicopter landed tailwheel first, followed right away by both mainmounts. The landing was firm but not hard. Rotor RPM was kept at 96 percent and the cyclic was not moved aft, nor was either pilot aware of any rapid downward collective movement. However, three main rotor blades flexed downward and contacted the top section of the tail rotor drive shaft.

A loud bang was heard, followed by strong vibrations. The HAC sent a crewman to take a look. The crewman reported a damaged tail rotor drive shaft cowling, and the HAC shut down.

Troubleshooters were unable to find any mechanical reasons for the dinged cowling, so pilot technique became suspect. The most probable cause of the downward flexing main rotor blades was a rapid lowering of the collective on touchdown – despite denials by both pilots.

Practice single-engine landings are an integral part of the training syllabus and, when performed in accordance with prescribed procedures, there is limited risk. The copilot had previously demonstrated on several occasions that he could handle single-engine work. His supervisors felt that the importance of collective positioning is not fully appreciated by the young studs in most squadrons. Great emphasis has been placed in the helo community on cyclic movement, but not much has been said about collective movement.

Helicopter NATOPS manuals caution against aft cyclic movement on landing but, to a large degree, neglect the importance of downward collective movement. As a result of this incident, all pilots in the squadron were briefed. Hopefully, many other helicopter pilots will now know.

The bottom line for all HACs to remember is that they bear the burden for safety of flight and need to be alert to ensure proper techniques and procedures are exhibited at all times. ◄

APPROACH interviews

Santa Claus

A candid conversation with the world's most experienced aviator.

Prologue

He is one of the most renowned figures in the world today. Even more significant, he has maintained the status of a world superstar for over 15 centuries. His immense popularity knows no geographical, political, or social boundaries and shows no evidence of decline.

Born in 352 A.D. in Asia Minor, he eventually became the bishop of Myra, in Lycia, Asia Minor, during the latter part of the 4th century. Referred to as Sint Nikolaas (Saint Nicholas) at the time, he became known as the patron saint of children. He is said to have provided three local maidens with a suitable dowry by throwing purses of gold in their windows, thus launching a career of gift-giving that continues to this day.

Some time in the early 5th century, Santa Claus abandoned his pedestrian charity efforts, moved into relative seclusion somewhere near the North Pole, and over a period of several years, developed a totally unique form of air travel to aid in his efforts to make people happy. During the next few years, he gradually built a reputation as the personification of the religious and holiday spirit of Christmas.

Although his reputation and deeds are known worldwide, the man himself has remained a relative mystery to this day. After months of exhaustive efforts, APPROACH editor Dale Smith was able to arrange an exclusive interview with Santa Claus. The interview took place in an undisclosed location in northern Quebec, with the agreement that the conversation be limited to Mr. Claus's expertise and experience in aviation and that no photographs be taken. What developed was an amazing dialogue concerning aviation, aviation safety, and some incredible facts about the man himself.

Continued

APPROACH: Sir, I can't tell you how honored I feel to have this unique privilege. I must say, I'm very curious about why you have chosen to break centuries of silence in order to do this interview.

CLAUS: Actually, it's very simple. This was the first time I've ever been approached with the idea of doing an interview that was solely for the benefit of doing good for others, and not for commercial profit or personal gain. Being a noncommercial magazine, APPROACH seemed like the perfect vehicle for this one-time interview.

APPROACH: Before getting into our primary topic, that of aviation safety, I wondered if I might ask you a few questions about yourself? I realize that this is contrary to our agreement, and will understand if you refuse, but I'm extremely curious about a few areas.

CLAUS: Fire away, but I may not answer all your questions.

APPROACH: Fair enough! . . . I suppose I'm most curious about your age, now that I've seen you. Judging from historical records, you would be 1627 years old this year, but somehow you just don't seem to fit that mold.

CLAUS: Well, this is a little touchy, but I'll see if I can answer you without giving away too much . . . I am Santa Claus V, and I'm 86 years old.

APPROACH: That seems to destroy the "one Santa Claus" theory. Can you shed a little light on what happened to the original Santa Claus, and how you came to be the present Santa Claus?

CLAUS: To be as clear as possible, I am the "real" Santa Claus. The original Santa Claus, my great, great grandfather, moved to the area of the North Pole about 415 A.D. to expand his gift-giving and good deeds throughout the world. He took with him a blonde, Swedish beauty to be his wife. While she was alive, they had one son, my great grandfather, and all of their other children were dwarfs, or elves as you call them. The original Santa Claus lived to be about 400 years old, as did Santa Claus II, III, and IV.

Due to a genetic and chromosomal mutation, probably caused by the sudden change to an arctic climate, each Santa Claus will have one son during his life, and this son will be the new Santa Claus when his father dies. All of the other children will be elves. The only requirement is that we marry blonde, Swedish women.

Since we live to be about 400 years old, we generally don't marry until we're about 150. We obviously outlive our spouses, so we normally marry about five or six times within our lifetimes. The new Santa Claus will usually be born when we are about 350 years old. This is how there can be several Santa Clauses throughout history, but only one "real" Santa Claus at any given time.

APPROACH: This is simply amazing. I don't believe anyone has ever hypothesized this theory of Santa Claus. I have one rather insignificant question about what you just stated, though. How do you go about finding a wife?

CLAUS: You know all those jokes about women waiting to try and put the moves on Santa Claus . . . on second thought, I think this is one of those secrets I better just keep to myself. I'm not married yet anyhow, just shopping around.

APPROACH: I understand. I guess we better get to the main subject of this interview – aviation. I suppose the legends of your flying around the world in a sleigh with eight tiny reindeer are erroneous?

CLAUS: Absolutely not. I can't really reveal the details of my reindeer propulsion system, but it does exist.

APPROACH: Isn't reindeer propulsion a bit archaic compared to modern aircraft powerplants?

CLAUS: Not on your life! If OPEC continues increasing crude oil prices, you hot shots in your F-14s will be trying to convert to reindeer power. Besides that, there have been several improvements incorporated into the reindeer fleet over the years. For example, Rudolph IX, my lead reindeer, has a high-intensity strobe for a nose instead of the old steady-burning red light of years ago. He's also equipped with a collision avoidance system, in order to avoid getting run over by you turkeys, and has a ground proximity warning device integrated into his hooves. Your helos don't even have those yet.

APPROACH: You've got us there. I had no idea your sleigh and reindeer were so complex and well equipped. What are some of the other systems you have in your sleigh?

CLAUS: I've got several systems that I'm unwilling to discuss, but I do have a few systems that you use in your newer aircraft – ground mapping radar (although mine is far superior to any you've developed yet), a new OMEGA navigation set, and a computerized targeting system (to make it easier to pinpoint a specific rooftop in your highly congested cities). Most of these systems are interfaced with my new computer. The elves like to call the latest update of my sleigh the ELF 1011. That's a little joke back home!

APPROACH: I had no idea that your avionics were so advanced. I was under the impression that you flew VFR "all the way."

CLAUS: I still enjoy a little old-fashioned "stick-and-whip" flying now and then, but I need a good IFR capability. I can't control the weather; I'm Santa Claus, not God.

Even with the best systems in the world, I still have to rely on the old eyes to keep me out of trouble at times. I don't think your younger pilots realize that they're still a long way from totally safe instrument flight. I'm not even there yet, and I'm miles ahead of you guys. Frankly, with the increasing congestion of air traffic, I don't think we'll ever get past the bottom line of "see and avoid."

APPROACH: I get the impression that you don't think too much of the younger pilots of today. Do you feel

that they're weaker than their predecessors of, say, 15 years ago?

CLAUS: No. In fact, I'd say that they're better. It's just that aircraft are much more complicated now than they were 15 years ago, and much more is demanded of the people that fly them. The basics of flying remain unchanged, but the required knowledge of extremely complex systems takes a lot of effort.

I do think that there is an increasing tendency to rely too heavily on controllers, systems, etc., and not enough emphasis placed on knowing how these systems work, how to tell when they're not working, and what to do when they fail. This level of knowledge is a lot to ask of a pilot, particularly in your more modern aircraft, but this is what it takes to be a truly professional pilot.

APPROACH: Do you feel that a lack of knowledge is the most significant problem with the aviators of today?

CLAUS: No, not really. It will continue to be somewhat of a problem, especially with the constant increase in aircraft complexity, but I think that the single most important problem with aviators today is complacency. This may seem a little trite, because complacency has always been a problem with professional pilots, but I think it may be worse now than ever before.

APPROACH: With all the emphasis being placed on aviation safety, it's hard to believe that complacency may be more prevalent today than it was 10 years ago.

CLAUS: Well, the basis of my theory is this – the safer the design of aircraft, the lower the aviation accident rate, and the more standardized flight procedures become, the more likely it is for a false sense of security to overcome your pilots. They incorrectly perceive that flying is so safe nowadays that no accident could ever happen to them. Unfortunately, the more safety features you get, the worse this problem will become. It will take more and more effort on the part of supervisors and safety personnel to counteract this tendency towards complacency.

APPROACH: I'm afraid that your theory is probably too true. Have you got any ideas on how to combat this problem of complacency?

CLAUS: I believe that it has to be attacked from several directions at once. Training, publicity of current accidents, accountability . . . I could go farther, but you probably know them as well as I.

APPROACH: Yes, the naval aviation community is quite familiar with these "solutions." Unfortunately, it is terribly difficult to get through to the people who need it most. They seem to walk around with their head in the clouds and ignore any useful information.

CLAUS: Yes, I know what you mean. I have a few elves like that. In my case, though, it's usually dealt with fairly easily. You see, it's easy to get the attention of an elf that weighs 65 pounds when I top out at well over 200. I have a fairly happy work force in general, so it's not a significant problem for me. This is true of my maintenance elves as well as my toy makers.

APPROACH: Speaking of your elves, you said each Santa Claus only has one son, who becomes the new Santa Claus upon his father's demise, and that the rest of the children he has will be elves. How many elves do you generally have, and what becomes of them?

CLAUS: Over the period of our married lives, usually about 250 years, we have historically had about 500-700 elves each. They are often born as triplets or quadruplets, kind of like a litter of tiny babies. They're cute little buggers, and smart as a whip. Unfortunately, they only have a life span of about 25 years and they're unable to reproduce, so it's lucky that we are able to have so many of them. Of course this keeps our wives quite busy, but they always think they're quite adorable. I personally love children, so there are never enough of them as far as I'm concerned.

APPROACH: Your affinity for kids is well known. Do you ever get an opportunity to have personal contact with them?

CLAUS: Oh, sure! I get jobs as a department store Santa Claus all over the world during the Christmas season. It's my favorite time of the year. I can't believe some of the jokers they get to impersonate me at some of these stores, though. It's insulting.

APPROACH: I can imagine. I've seen some real losers parading around as Santa Claus.

I must ask you how you manage to deliver presents to kids all over the world in one night. Is that really possible?

CLAUS: Yes, but I'm afraid that I can't go into much detail about how I'm able to do it. A crew of my five best elves and I man-up the sleigh, as soon as the sun sets at the international date line on December 24th, and go to it like madmen. Santa Claus I and II used to do it alone, but it just became too much with the population explosion and the new avionics systems in the sleigh, so Santa Claus III developed the crew concept. It's still a big job, but extremely satisfying.

APPROACH: Santa Claus, I can't tell you how much we appreciate you doing this interview. It has been fascinating, to say the least.

CLAUS: It's been a pleasure. I love to talk aviation, and none of the elves really seem to be able to get into it.

I'd like to say one thing before we end. I just wanted your readers to know that I envy them one thing – a chance to hit the boat. I've thought of giving it a try a couple of times, but I decided I'd scare the LSO to death if he saw me roll into the groove with a sleigh and eight reindeer. Just the same, I may give it a shot one day . . .

APPROACH: We should probably discuss this later, but there is something I wanted to ask you before leaving. It's about next Christmas. There's this blue *Ferrari* I saw in a magazine last week . . .

Flight Line Behavior

By LCDR J. S. Boyd
VS-38

SQUADRON flightcrews are too often put on report by line personnel. Line personnel use the squadron "OP Hazard" report or "Anymouse" form to bring to the attention of the safety department: 1) procedural errors, 2) nonstandard aircrew action, 3) unsafe behavior, and, in general, 4) perceived flightcrew "D.S.s."

Two possible courses of action can be taken regarding these plane-captain-generated reports:

a. Ignore these "Anymouses" (or Anymice) and they will, in time, go away. Nothing is more demotivating for an Anymouse submitter than his assumption that no action will result from his report submission.

b. Study the report chits and see if the shoe fits, so to speak, and if it does, alter flightcrew behavior accordingly.

Let's take a look at the "Anymouse" reports as proposed in subparagraph b. The following is a list of Anymouse items of interest, or "shoes," if you will.

I never see any pilots picking up FOD!!

* One of the most often reported flightcrew-initiated hazards is "... The pilot was ignoring plane captain signals. His attention was locked inside the cockpit." Most will agree that it's not only hard to see with one's head up and locked, but it's even difficult to breathe in this euphoric, unsafe, discourteous, and unprofessional mental state.

* "The pilot apparently didn't get his nosewheel steering off before final checkers moved in under the aircraft. The nosewheel/launch bar kicked viciously while I was inspecting the nosewheel."

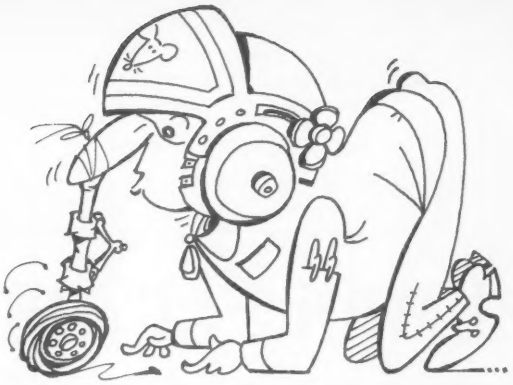
* Sunday return from a cross-country: "Aircraft coasted right through the hot brake check area and was en route to parking itself on the line when stopped by duty section line personnel. Flightcrew appeared bleary-eyed, tired, disinterested, and in a hurry to park and exit aircraft."

* "The pilot added too much power leaving the line area. He appeared to be in a sour mood and in a hurry. Blew over a FOD can and two final checkers." This

If the shoe fits...

Our cockpits are getting dirtier and dirtier!!

I overheard two pilots discussing tools they carry in their helmet bags...



The pilot apparently didn't get his nosewheel steering off...

particular Anymouse was endorsed by two similarly soured final checkers.

* "Auxiliary power unit was started without plane captain signal or consent. The TACCO was in the S-3A FLIR compartment during the start (very close). I think this is unsafe." The TACCO – by the way – concurred with this Anymouse.

* "Flightcrew strolled to aircraft from maintenance control without proper hearing/eye protection. Another aircraft was turning in the immediate area. Why are flightcrew personnel different than I when it comes to protective headgear?"

* "I never see any pilots picking up FOD in the line area on the way to the aircraft. I thought FOD was a squadron problem."

* "Aircrew walked directly behind aircraft when the No. 1 engine was at 80 percent. I think aircrew should walk in front of, not behind, aircraft at high-power settings."

* "Both pilot and copilot departed aircraft at the same time during crew hot switch. Front seats were unmanned for about 60 seconds." Upon confronting the last pilot out of the aircraft, he admitted to a headwork lapse and the resultant inattentive, unthinking, unprofessional, and unsafe behavior.

* "Pilot seemed to want to get ahead of the plane captain during ground checks. He looked like he was in a hurry. He confused me."

* "I am often a brake rider for aircraft moves. I think our cockpits are getting dirtier and dirtier: peanuts on the deck, pencils everywhere, chocolate on the ejection seats, gum wrappers in the map holders, and, generally, garbage all over. I'm glad I don't ride in those FODed airplanes."

* "Yesterday, in maintenance control, I overheard two pilots discussing tools they carry in their helmet bags – screwdriver, pliers, nail clippers, etc. These tools are not controlled by our tool control program. I think this is unsafe.

Their tools can FOD aircraft too."

Why are flightcrew personnel different than I when it comes to protective headgear?

Some sour grapes here? Maybe. Mostly BS and not applicable to your squadron? Maybe. Not an overall picture of your squadron's flightcrew behavior – only spot incidents?

Frankly, these "shoes" look to be pretty common-sized and, more than likely, worn by all flightcrew personnel occasionally. Let's not let our dandy flightjackets and big shiny wristwatches impair an objective look at our behavior. If these shoes fit, discard them, please. ◄

By LCDR Richard H. Shannon, Ph. D.
and
Robert A. Alkov, Ph. D.

HUMAN FACTORS IN AIRCRAFT ACCIDENTS

THE field of human factors in safety is concerned with the human component within the total man-machine-environment system. Within this framework, aircrew or maintenance personnel interface with equipment, tools, or aircraft within the constraints of the organization, weather, geographical locale, and other aspects of the environment. The human interface with the machine and environmental components of the system employs man's sensory, cognitive, and motor capabilities.

For example, a pilot detects and identifies objects in his environment, makes a decision based on this sensory input and prior learning, and executes a course of action (see Fig. 1). It can be seen that the total man-machine-environment system is similar to a chain made up of many

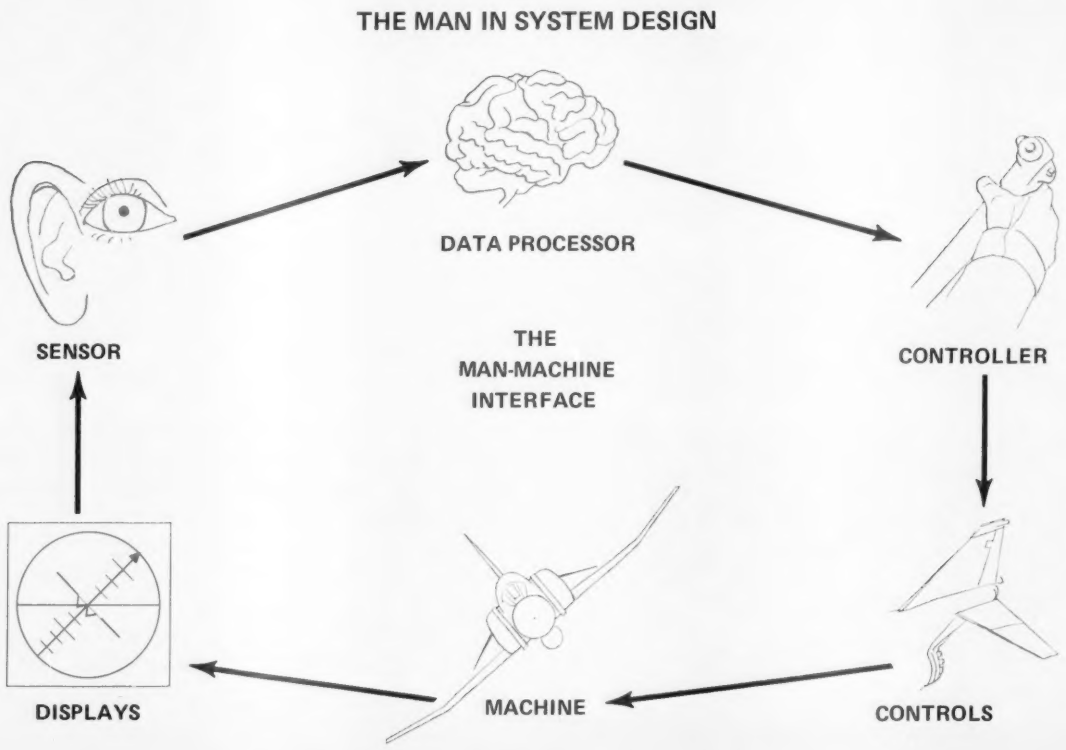


FIG. 1

links. The failure of any link in the chain reduces the effectiveness of the system and increases the potential for a mishap.

How serious is the human error problem? In terms of major accidents, human error has consistently contributed to over 80 percent during calendar years 1976 to 1978. However, as a primary cause, it has been indicted in at least 50 percent of the major accidents.

Primary cause, as the major reason for a mishap, is a more valid measure of accident trends. The Naval Safety Center codes primary cause as pilot, other personnel, material (failure or faulty design), weather, facilities, design (of equipment), and undetermined. In this article, we will refer to pilot and other personnel, as primary causes of aircraft accidents, under the general heading of human factors.

The primary causes for all Navy/Marine major aircraft accidents were studied and rates drawn up for those attributed to human error and those due to other causes. These rates (per 10,000 flight-hours) were plotted for calendar years 1970 through 1978 and compared to the overall (combined causes) accident rates for those years (see Fig. 2). The human error rates consistently decreased from 1970 to 1975, but have remained relatively stable in recent years. This trend could be an indication that a level of human error may have been reached that may be difficult to improve upon, unless new accident prevention techniques are developed. Previous safety efforts have proven effective. However, reflection upon the consistent increases in costs

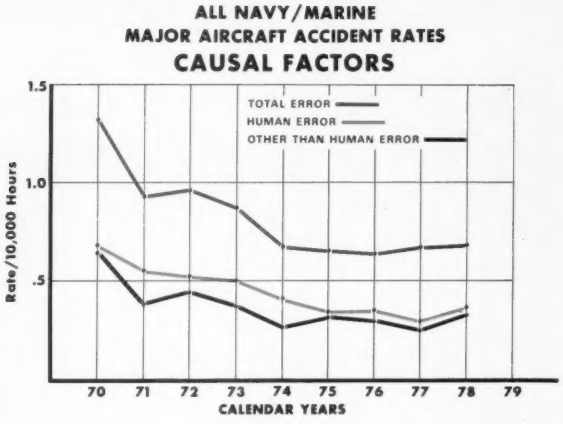


FIG. 2

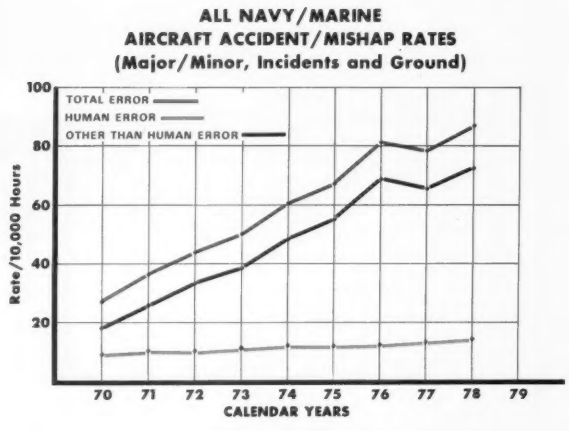


FIG. 3

of accidents, due to inflation and more sophistication in equipment, leads to the conclusion that a change in orientation is needed. This issue will be discussed more thoroughly later in this article.

For the moment, let us consider all mishaps. The term "mishap" is used to describe all accidents or incidents occurring to naval aircraft or personnel handling naval aircraft, in flight or on the ground. The study of all mishaps is important to the understanding of human error trends because of the need to study the hazardous environment rather than just the event itself. In other words, hazards leading to an incident, uncorrected, could result in an accident at a later time. Therefore, analyses into human error should place as much emphasis on causes of incidents as upon causes of accidents.

Figure 3 indicates three significant mishap trends from 1970 to 1978:

- Human error rates have remained relatively stable over time.
- The percent of human error involvement in mishaps, compared to total mishaps, has decreased from 34 percent in 1970 to 16 percent in 1978.
- Mishap causes other than human error have increased linearly over the same time. If there is to be any further decrease in the number of human factor mishaps, there will have to be a change in the safety orientation at every level of command within naval aviation.

What must we do to accomplish this change in orientation? A systematic identification and analysis of the causes of human error must be undertaken. This might be accomplished through the use of the five "P" classification of human factors described by Dr. Anchard Zeller.[1] These factors are the **physical**, **physiological**, **psychological**, **psychosocial**, and **pathological** limitations or strengths of human beings. These five labels are not necessarily independent of each other. Their purpose is to aid in the description of the factors which have caused problems in safety. These factors include the physical and behavioral variations among people, the structural and functional limitations of the body, and the requirements to maintain physiological functions.

Some of the more obvious **physical factors**, which are related to successful man/machine operation, are physical strength and stature. Requirements should be changed so as to take advantage of the capabilities of people. For example, the recent emphasis upon increasing the number of females in the Navy has created problems relating to clothing, manual handling of equipment, tools, and cockpit geometry. Decisions, therefore, will have to be made to change either the selection process or the physical variables, in order to ensure a match between the person and the task. Another important variable involves bodily dimensions and the range of motion of limbs, head, torso, etc. Failure to provide adequate space might be critical for the performance of a system, as well as the well-being of the operator. For example, in the design of some aircraft cockpits and ejection systems, the lack of consideration given to the physical interface between man and machine has resulted in inadvertent equipment operation, fatigue, discomfort, back injury, and leg/foot contact during ejection. Similarly, the lack of thought given to maintenance personnel in the design of equipment leads to maintenance error.

In addition to general anthropometry, a study of physical limitations of man includes sensory functions such as vision, audition, and the vestibular and kinesthetic senses. Visual considerations include visual acuity, dark adaptation, peripheral vision, autokinesis (light movement), distortion, illusion, display readibility, glare, cockpit lighting, and external/internal scan pattern. The eyes act as our main sense for information input. Without their input, people cannot be expected to react sufficiently or effectively.

The auditory sense is important in obtaining information which must be both audible and unambiguous. Further exploitation of this sensory modality offers potential as a vehicle for warning and information systems. The vestibular or inner ear canals aid in maintaining our balance and equilibrium. The muscular/joint or kinesthetic sense allows us to determine motion and gravitational pull which

[1] "Three Decades of USAF Efforts to Reduce Human Error Accidents 1947-1977," by Dr. Anchard F. Zeller, USAFISC, Norton AFB, CA. (Presented at the 35th Specialists Aerospace Medical Panel Meeting of NATO/AGARD.)

gives us the ability to fly by the seat of our pants.

A knowledge of these physical and sensory functions, with their attendant uses and limitations, can improve system design and man's ability to properly and safely utilize the system.

The list of **physiological variables** important to flight safety includes oxygen, alcohol, toxic substances, drugs, motion sickness, aging, gravitational tolerance, and fatigue. An understanding of the role of fatigue and the need for systematic control of rest periods have been important in the development of crew rest requirements. The effects of toxic substances on the body and its ability to perform have been studied. The results of these tests are reflected in the limitations placed upon allowable toxic emissions. The use of alcohol and drugs and their relationships with deteriorating efficiency have been analyzed and have resulted in restrictions of their use.

Psychological variables can be classified as being related to mental functions and processes. We must recognize that there are large individual differences in people's capacity and aptitude for various types of activity. The role of learning in training is being studied. Some studies have attempted to analyze the amount of training that can be transferred from one situation to another, such as a pilot transitioning from one aircraft to another. Other studies have scrutinized the functions or tasks that can be developed with simple training aids or sophisticated simulators, instead of actual aircraft experience. Still other investigations have reviewed the implication of habit interference, task overload, and pilot workload to the occurrence of errors. In general, these studies are concerned with mental functioning and decisionmaking capabilities within the total system.

Psychosocial forces are also of demonstrated importance. The impact of peer pressures and social mores on group activities is well known. Evaluations from accidents indicate that performance is directly related to the expectations of the group. If the social climate encourages adherence to discipline and procedures, a high level of attainment can generally be foreseen. On the other hand, if the social atmosphere is one where violations and deviations are accepted, and not only condoned but rewarded, unacceptable safety practices can be expected. Those squadrons demonstrating a poor understanding of motivation and principles of management usually have lower morale, lack of job satisfaction, and poorer retention of qualified personnel, as well as an increase in human error mishaps. If a person were to walk throughout the spaces of an outfit, he could roughly assess the organizational climate. Such items as professionalism, discipline, people working together, communication up and down the chain, personal respect for each other and the squadron, rules being followed, training programs, and clearly defined goals can be observed, and usually indicate a healthier and safer atmosphere.

Another area of concern involves the stressful effects of life changes which can influence one's frame of mind or motivation to perform. For example, divorce, serious illness, death in the family, and other traumatic events, as well as work frustrations, economic problems, and other situational stresses can result in an individual having a tendency to be "accident prone." During these transitional phases, an individual is preoccupied with personal problems which could lead to a human error mishap.

Finally, the study of **pathology** includes an analysis of the physical and mental health of the individual. More common than major physiological adversities are the minor ailments which the individual does not recognize as important, but which still have an impact on his efficiency. For example, a person may be taking self-medication because of a slight cold, or he may be concerned over the health of a family member. Either of these events are relatively minor problems, but could become major over time if they are not watched. Constant vigilance, counseling, and interest by supervisors and friends may prevent the occurrence of a serious pathological situation. Other symptoms that can be observed are alcohol/drug usage, unmotivated/withdrawn behavior, depression, sleeplessness, poor appetite, anxiety, and fear of flying. A relationship has also been shown to exist between physical and mental health and organizational climate. In other words, to some extent the health and safety of the men and the outfit are dependent upon the interest shown by those in authority.

This summation of human factors is not complete, but it is sufficient to describe some of the factors affecting human error. Hopefully, from this synopsis, will follow a partial understanding of a very complex topic. Previously, this article has alluded to the need for a philosophical change within our safety programs at all levels. The realization that our human error rates may not significantly improve while the cost per mishap will consistently increase suggests that a more innovative program will be necessary for future improvements. Part of this thrust should be the attempt to understand not only symptoms but causes. People must be considered as a part of the total system because they can be affected negatively by poor machine and environmental conditions. Therefore, the isolation of the multivariate causes surrounding mishaps is necessary if the occurrence of human error is to be decreased. ◄

In next month's issue, Doctors Shannon and Alkov will discuss in their article, "Human Factors in Aircraft Accident Prevention," how the science of human factors may be used to decrease our human error mishap rates.

GETTING THE HOP OUT

By LT Bob Ricciardi
VT-23

IT was the third day of a scheduled 2-day carqual evolution. Events began on Friday, the last scheduled day of CQ operations, when the weather deteriorated below student CQ minimums and we were not able to complete the remaining students. A decision was made to keep the boat at sea and finish the remaining work on Saturday.

On Saturday morning, our 0700 overhead was delayed due to the weather being below minimums. Constantly badgering the duty weather guesser didn't produce any improvement in the forecast. After about 2 hours of holding (*with some comments between the ship and ourselves*), a decision was made to launch for the boat with instructors in the front of the trusty T-2s, students in the back seat. The plan was to fly to the ship and give each instructor a touch-and-go and two traps. The IPs would then jump out and let the students have it.

The weather at our point of departure was reported as 600 feet overcast and 4 miles visibility. The ship's weather was 1200 feet overcast and 10 miles visibility. Our grand plan was to fly out to the ship VFR, under the overcast, and this was coordinated with Departure. We determined that we had circling minimums and my leader and I briefed a section takeoff.

With great anticipation of bagging some traps, we

manned our aircraft and went for it. As we rolled down the runway we executed a flawless section go, but – SURPRISE! – we were in IMC at 300 feet. *(Hey, they said it was 600 feet over.)* Realizing that we would be unable to maintain VFR (unless we wanted to proceed to the ship at 200 feet), lead advised Departure of our situation and we requested and received an IFR clearance to the boat. We proceeded to the boat at 4500 feet, in between layers, and were given Marshal instructions upon checking in with the ship.

Still laughing and scratching with my lead in holding, we listened to a COD make his approach to the ship. He reported breaking out at 500 feet with ragged bottoms. *(Hey, they said it was 1200 feet over.)*

By this time three other aircraft had checked in and our flight was given vectors to separate us for a Case III recovery. Fuel at this point was 3200 pounds and the lead was started down the chute with me not far behind. *(This is where the story gets good.)* Listening to my lead's approach was not encouraging. It went something like this: "One-half mile, CALL THE BALL; Clara; YOU'RE LOW, GET IT UP; WATCH YOUR LINEUP," and then a trap. As I came down the chute *(my lineup was a little rough)*, the controller requested a ball call at one-half mile. He ceased giving me glide slope and lineup calls, but there was nothing in front of me but white. A call from the LSO to continue working me got the controller back, but I felt I had pushed far enough and executed a missed approach *(the second of my naval career)*. I was turned downwind for a second approach *(I'm not sure why, since the LSO later told me he couldn't see the water from the platform)* with my fuel at 2500 pounds. The next call I got was to bingo to a nearby Air Force base along with the remaining three T-2s in Marshal. The reported weather at the AFB was 400 feet scattered, 800 feet overcast, and 4 miles visibility. After checking in with Approach, I learned that the aircraft ahead of me was being vectored to NAS vice AFB. Since I thought it was more convenient to land back where I started from, I elected to follow my squadronmate. The weather was reported 200 feet overcast and 7/8-mile visibility at NAS. As I was being vectored, Approach advised me that I would have a 12-knot tailwind and, no thank you, I would not like to hold for a runway change.

The aircraft in front of me broke out and landed. I was not so fortunate and I executed the third missed approach of my naval career. I realized that maybe it wasn't such a good decision to try this approach. I had 1500 pounds of fuel remaining, and the weather was obviously deteriorating. *(It was, as the area was experiencing frontal passage.)* I could just imagine the fun Grampaw Pettibone would have with this one.

I requested vectors to the AFB and was followed by one other T-2. Of course, to make things more interesting, my TACAN azimuth was unlocking and I was experiencing difficulty talking with Approach Control. At this point, the full realization was upon me that this was my last chance for an approach with the alternatives not being very pleasant. The weather observation had not changed, but by this time I was starting to lose faith. I was vectored for a GCA, and again, the weather was below that given. At about 200 feet, I picked up the strobes *(I would like to take this opportunity to thank the individual who invented strobes)* and picked up the runway as the controller called decision height (100 feet). I made an uneventful landing, and one of my happiest, with 900 pounds of fuel.

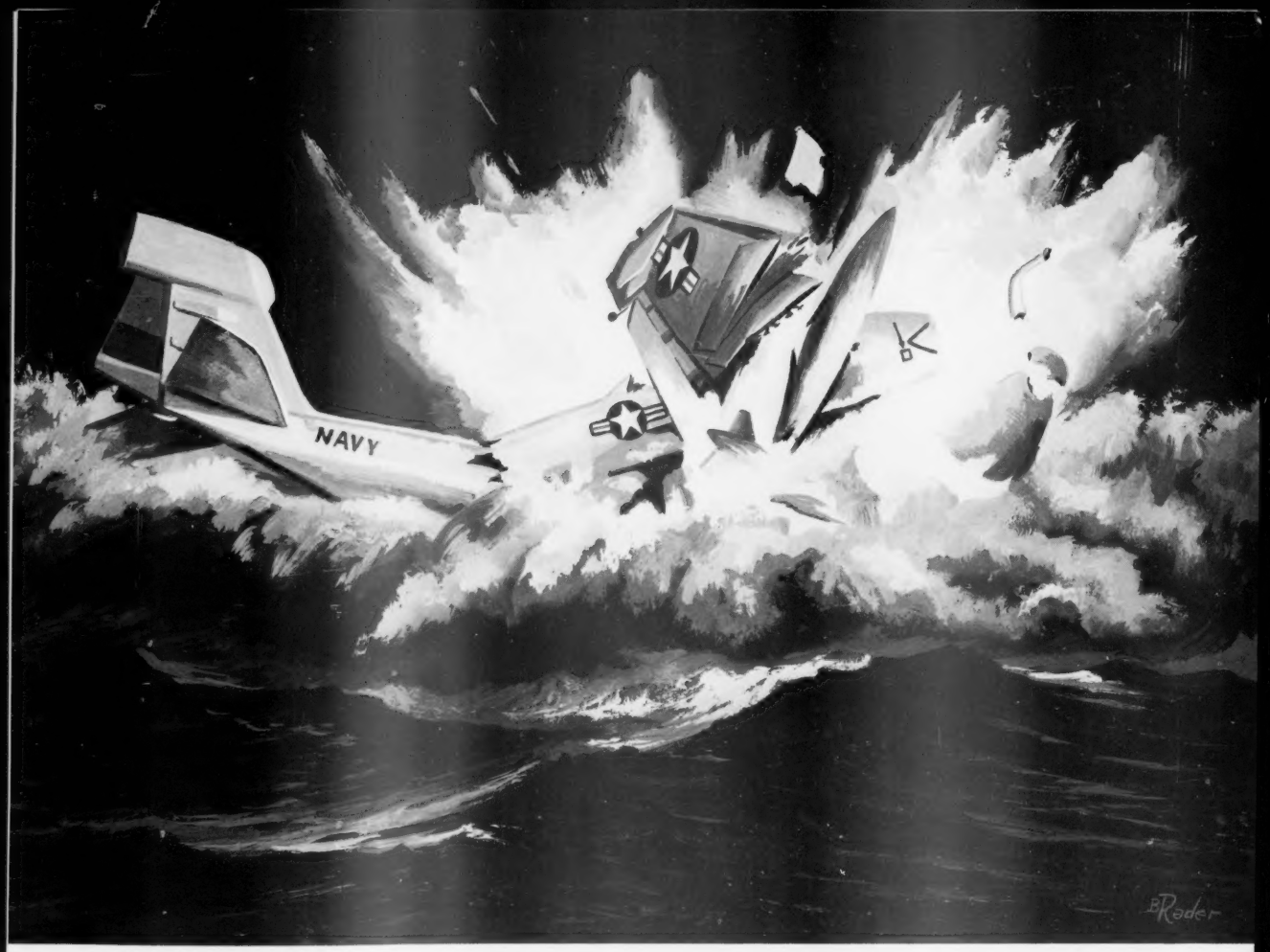
The second aircraft landed behind me and we watched the weather get worse from base ops *(it was reported 200 and 1 when we landed).*

In about 2 hours the weather began to clear and we launched again for the boat to complete our earlier plan.

That day I learned two valuable lessons. When a decision has been made on a bingo field, don't take it upon yourself to change it. I knew I had enough fuel for two approaches, but had the weather deteriorated any further in the time it took for my first approach, the outcome of the story may have been very different.

Also, in the training command there is a lot of pressure to get the hop out, but at no time should safety be compromised.

How many times do we launch into marginal weather or with an aircraft that may not be up to par? Every time we push, we run the risk of an accident, and there is just no excuse for losing an aircraft or life just to get a hop out.



"Plane in the water!"

The EA-6B was scheduled as Event 7 on the carrier's flight schedule. It was a quiet night off the California coast in the fall of '78. The weather was cooperative – clear skies, 7 miles visibility, winds generally out of the NNW and slightly over 20 knots, temperature in the mid-sixties, with a combined sea and swell height of 7 feet.

The normal crew of the *Prowler* was not intact, as its regular pilot had not completed day refresher quals and could not pilot the aircraft from the ship at night. Therefore, the flightcrew of the EA-6B was made up of a substitute squadron pilot and the normal crew's two ECMOs. The flight mission would be twofold. The substitute pilot needed one night trap for qualification, and the two ECMOs needed a ride back to the beach, where they would join their regular pilot the following day to complete his CQ.

On the day before Event 7 launched, the normal crew had made a harder-than-normal carrier landing in the same aircraft; one that necessitated a thorough inspection prior to its next flight. The inspection was done IAW the appropriate EA-6B maintenance requirements, and revealed

that the nose gear shrink-link cable had broken in half. It was replaced with an A-6E's shrink-link cable, borrowed from a VA squadron aboard the ship. Although the two cables had different part numbers, the maintenance personnel of the VAQ squadron felt that the cables were interchangeable because the last three digits of the part numbers were identical. In actuality, the A-6E's cable is 1¼ inches shorter than that of the EA-6B's. A drop check of the landing gear was not required, so none was conducted. The *Prowler* was UPed for flight and scheduled for Event 7.

All three members of the scheduled crew had flown CQ sorties the day before and had eaten normal meals in the 24 hours preceding the flight. However, the pilot had been up 17 hours since his previous night's sleep, with only a short nap that afternoon. The two ECMOs had been up for 18 hours. The pilot flew aboard the boat, just prior to midnight, and left his "taxi" to man the EA-6B for Event 7. Already aboard and awaiting the pilot were the two ECMOs, who had been in the cockpit nearly an hour, readying for the one night trap and the subsequent ride back to the beach. It had definitely been a long day/night – one that wasn't over yet! But the day/night was not long enough to conduct a thorough brief. There was just enough time to man-up and go – unfortunate, but true.

On poststart, the systems were checked. The left generator went off the line and had to be reset by squadron troubleshooters. A minor LOX indicator problem was discovered and that, too, was resolved.

On the cat stroke, the red landing gear transition light, above the landing gear handle, illuminated, indicating an unsafe situation with the handle down. After flying around the pattern and slowing to approach speed, the light went out, and a normal arrested landing was made an hour after midnight.

Following the trap, troubleshooters again located the problem in the nosewheel area. A loose nosegear downlock microswitch was responsible for the unsafe indication. After a "conference" among the maintenancemen, it was decided that the problem couldn't be corrected in time to make the launch to the beach. Conferring with the pilot by means of an external ICS connection, *all* agreed that the aircraft was safe for flight and could be repaired more effectively back at the beach.

Although the aircrew considered "downing" their bird, they agreed to fly the aircraft back to Homeplate, after discussing the various gear-up/down, slats-up/down bingo profiles and fuel requirements. An hour-and-a-half past midnight, the launch to the beach commenced. On the cat stroke, the red landing gear transition light flickered ON twice, according to the only survivor. During the discussion concerning possible corrective action that followed, the pilot related to the No. 1 ECMO that he would raise the flaps/slats passing 185 knots and proceed to NAS Homeplate at 240 knots with the gear down. This was the last discussion remembered, as the surviving ECMO soon "felt that the airplane was coming apart." He heard an explosion, and almost simultaneously, felt a pain in his back. The next thing he remembered was the sight of two bright flashes, caused either by rocket seats firing or the aircraft exploding.

The "ejected" ECMO was in the air for but a few short seconds before landing in the water in front of the ship. After some difficulty following water entry, the lone ECMO inflated his LPA, and as his head appeared above water, he saw the carrier bearing down upon him. He released his chute and seatpan and made attempts to swim away from the oncoming bow. He managed to swim out of the direct path of the ship, and the bow wave pushed him out even further. By utilizing his pencil flares and day/night signal flare, and with the aid of the helo's swimmer, the lone survivor was back on the carrier within 30 minutes after launch. The two other crewmen of the *Prowler* remained missing.

There were several witnesses that observed the explosion and fireball. All stated that the aircraft "came apart" either as a result of water impact or just prior to impact. The time of night precluded confirmation of either, but the aircraft most probably was flown into the water and disintegrated on contact. Only one fully-deployed chute was seen silhouetted against the fireball as the call, "Plane in the water!" echoed about the ship.

The loss of the EA-6B and the two crewmen was attributed to the pilot, who failed to maintain sufficient altitude and airspeed. This was speculated to be a result of distraction due to the gear problem. Had either of the two ECMOs properly monitored the flight instruments and subsequently warned the pilot of the impending dangerous situation confronting them, maybe the disaster would have been prevented. Speculation or Monday morning quarterbacking? Either way, it cannot be overlooked as a contributing factor in the accident.

Then again, who is to decide when an aircraft is to be "UPed" or "DOWNed" for safe flight? Should it rest with the troubleshooters? Who allows the exchange of parts? How about proper crew rest; what is enough for each individual? Most of the answers lie in MIMs, NATOPS, and unit SOPs. Still, each pilot-in-command has certain overriding **veto** powers, and should be able to determine whether his aircraft, his crew, or himself is, in fact, ready for safe flight.

The pilot and/or the appropriate supervisors definitely erred in this unfortunate mishap. Was the mission at hand more important than safety? Reread the facts – then, **you** be the judge. ◄

Port Side Plane Guard

Another Point of View

By LCDR Pete Blackwood
Staff Safety Officer
COMSEABASEDASWWINGSLANT

SINCE the advent of the helicopter as a search and rescue vehicle, an untold number of refinements and improvements in the basic platform and its *modus operandi* have occurred. In his article, "Port Side Plane Guard – A Better Way?" (NOV '79 APPROACH), CDR A. A. Granuzzo suggested a further refinement which has been used very successfully by the Royal Navy for years. This officer participated in evaluating port side plane guard under both VMC and IMC. While I acknowledge that it is difficult to argue with the RN's success, I believe the disadvantages cited by CDR Granuzzo serve to question the wisdom of utilizing the SH-3H to evaluate such a proposal.

This article advances three major objections to further interim evaluation utilizing the SH-3H: (1) mechanical problems; (2) performance problems; and (3) aircrew problems.

Mechanical Problems. As an ASW platform, the modern SH-3H is far superior to its SH-3A predecessor of 13 years ago. Regrettably, the aircraft's advancing age and the ASW improvements incorporated over the years tend to degrade its SAR capabilities. At its present operating weight, the SH-3H has very limited single-engine capabilities. Supply support problems and airframe cracks make it undesirable to operate the aircraft near the limits of its flight regime or in the high-vibration environment of translational lift which is frequently characteristic of the port plane guard position.

In contrast with its Royal Navy counterpart, the SH-3H is seriously lacking in state-of-the-art avionics. The RN coupler system references solely radar altitude vice the barometric and radar altitude inputs required by its USN counterpart. The RN system has a "dial down/dial up" capability which makes "manual" approaches to a night hover both safe and commonplace. This is largely due to the fact that the RN doppler system is superior in all respects, and produces a solid night hover stability. As a SAR vehicle, the SH-3H is simply not as capable or as effective as its RN counterpart. These factors speak against use of the SH-3H in any "station-keeping" plane guard position.

Performance Problems. A careful analysis of the proposed port side position with regard to the SH-3H NATOPS reveals several undesirable aspects. On a standard day at sea level, a 19,000-pound SH-3H at 30 KIAS and 110 feet AGL is: 1) out of the safe landing envelope for dual-engine failure; 2) marginally within the safe landing envelope for single-engine failure; and 3) not able to maintain level flight on one engine. At 20 KIAS, the same aircraft under the same conditions is restricted to 30 minutes in the environment by main gearbox continuous torque limitations. If the parent CV is making its own wind and is not aligned with the true wind, all of these problems are compounded, as the pilot is faced with a difficult transition into the true wind in his descent to a hover.

Aircrew Problems. Fatigue is a very real problem for a rescue aircrew. Suggesting that the pilot should fly the aircraft throughout the launch/recovery cycle could easily lead to his being at the flight controls in an extremely demanding environment for 45 minutes to an hour without a break. A rescue attempt late in a cycle could double this time. Nor is it realistic to ask the copilot to fly the position cross-cockpit to remedy the situation; structural members impair his vision to a large degree.

The aircrew would also be subjected to long periods breathing hot exhaust gases in a helicopter already noted for extremes of heat and discomfort. These factors can tire a pilot and/or swimmer rapidly, and critically impair his efficiency.

It is true that the flight deck creates an excellent visual horizon for the pilot of a station-keeping aircraft. However, in the event of engine failure, the HAC must either attempt a single-engine waveoff or execute a water landing. These maneuvers depend on reference to a dark ocean surface which cannot be seen clearly (even with flood-hover lights); hence, the pilot must immediately transition from a VMC scan of the ship to an IMC scan of the gages. The possibility of vertigo makes this a very hazardous transition.

Summary. The starboard Delta pattern currently depicted in CV NATOPS evolved through 30 years of experience. The "Delta" pattern allows the helicopter pilot considerable freedom to position himself as befits the situation. It seems that it affords greater flexibility than the port plane guard position suggested.

As a helicopter pilot, I applaud any proposition which serves to increase safety for ALL aircrewmen. Regrettably, I see the SH-3H offered here as a vehicle to improve CV rescue capabilities at the expense of increasing the inherent risks which confront helicopter aircrewmen. Given a SAR vehicle which is state-of-the-art, and which resolves the problems suggested by CDR Granuzzo and expanded herein, I would defend port plane guard as a means of improving our rescue posture. However, until such improvements are forthcoming, I believe that the risks inherent in operating the SH-3H in this environment far outweigh any potential advantages offered by its prepositioning in the port side parade position. ◄

BRAVO ZULU

LT P. Cox
LT J. Sokolowsky
Capt G. McCombs
1stLt L. Griggs
LTJG V. Tesdall

ALTHOUGH the T-34C "Turbo Mentor" is a relatively new addition to the inventory of Naval training aircraft, several flight instructors have already gained "hands on" experience with intentional gear-up landings. Through unrelated mechanical malfunctions, three intentional gear-up landings in the T-34C have occurred during its first 100,000 flight hours at Training Air Wing FIVE. Amazingly enough, all three landings were performed by instructors from Training Squadron TWO. In all three cases, the pilots' highly professional handling of each situation and their superior airmanship were instrumental in preventing injuries and minimizing damage.

24 July 1978 – On an instructor training flight, a rear bearing failure in the landing gear motor prevented normal or emergency extension of the landing gear. 1stLt L. Griggs, USMC, the pilot in command, executed a flawless intentional gear-up landing with the assistance of LTJG V. Tesdall, USN, the instructor under training. There were no injuries and damage was minimal.

2 March 1979 – On a dual training flight, the aircraft was waved off on final approach by Capt G. McCombs, USMC, an alert runway duty officer and a VT-3 flight instructor.The reason – a dangling nose gear due to a broken weld assembly on the nose gear torque link. Cockpit indications showed three down and locked! LT J. Sokolowsky, USN, brought the plane back around and performed an emergency nose-gear-up landing (mains down), with no injuries and minimum damage (see photo sequence). Only 65 man-hours were required to return the aircraft to an "up" status.

15 March 1979 – On a dual training flight, the port main gear would not extend by normal or emergency means because of a jammed door latch. LT P. Cox, USN, executed a picture-perfect intentional gear-up landing with no injuries and minimal damage.

The lessons learned and experience gained from these occurrences have brought about improved NATOPS procedures and modifications to the T-34C landing gear extension system. The professionalism and superb airmanship of these officers of Training Squadron TWO has done much to improve the operational knowledge of the Navy's newest training aircraft.

Well done to all of these pros.

SAFETY: Boon or Burden?

By LCDR James E. Novitzki
Aviation Safety Programs
Naval Postgraduate School

IN aviation we are constantly barraged with messages stating the importance of safety in all operations. The phrase, "Safety is paramount," immediately comes to mind. Yet, at the squadron level, it often seems that safety is far from paramount. The squadron safety officer often remarks, "The commanding officer [maintenance officer, operations officer] says that safety is important, but when something has to be done and there is not enough time to do everything, the first expendable is always the safety input."

COMNAVAIRLANT, in a recent message, summarized a view which may cast some light on this problem. The message said: If the safety officer feels he's not getting command support, the CO has not been adequately shown that an effective safety program will help him reach his goals. In other words, the problem may be with the squadron safety program, not with the CO.

Too often, safety programs make safety another burden or task which must be done, rather than a means to an end. This is a rather provoking thought. What it means is that while each element of a safety program can be shown to save lives, material, and money, these may not be the **major** concern of a squadron commander. The first and

foremost responsibility of any command is to get the job done; succinctly, mission accomplishment. To be able to do this with the least expenditure of men, material, and money may be rewarded, and is certainly not punished, if the mission is accomplished. Therefore, any program that reduces sorties, increases maintenance man-hours, demands more time for safety briefs, meetings, etc., while making the command safer, does not necessarily help get the job done! The result is that, in times of pressure from various sources to "Do it now!", these added extras are obviously the first to be deleted.

Does this mean that the squadron safety officer is in a futile situation? NO! It does mean that he may have to change his perspective. The role of the typical squadron safety officer is challenging. Freshly graduated from Safety School, he arrives at his command full of ambition and desire to really do something for his squadron and the Navy. But most safety programs in the Navy lack two things – balance and integration. They are not balanced because safety is usually considered the only driving force. Many plans fail to consider that training, operational commitments, etc. must, on most occasions, have a high priority. The effective safety program must allow for this and be set up to make the best of the situation. Unfortunately, too many just stop when opposition arises.

The next major area is integration. The safety program is often an add-on, something extra; one more thing which must be done with too few people and too little time to do the "really important things." As a result, it is often seen as a stumbling block. "You can't let Jack fly that hop [he hasn't had crew rest], and Joe can't do it because he hasn't had a day refresher." "You can't move that aircraft, you're missing a man."

Am I saying that the safety officer shouldn't be doing these things? No, of course not. What I am saying is that safety should be involved with maintenance and operations from the beginning, so that they are aware of the requirements and *they* help work out the solutions. The safe way becomes the normal way to do things. If the maintenance department has a well-written and *enforced* TIMI, an aircraft movement will not be considered without the required number of personnel. If there is a true emergency, the supervisor resolves the problem, not the people on the line. Once again, the safe way is the way it's always done; it's not a last-minute consideration.

Similarly, safety training should be completely integrated into all training. There should almost *never* be a "safety lecture." If the squadron is dropping bombs, an included topic is **safety precautions**, or at least the cautions, notes, and warnings from applicable publications. If the topic is carrier qualification, emergencies and similar considerations should be a natural part of the brief. If safety is included as an integral part of an evolution, it works to support squadron efforts, not as an extra which saps squadron strength from mission accomplishment.

Look at your squadron's program. What is good and bad about it? Is your program an add-on, or are you part of a team getting the mission done? Remember, the primary concern of the CO is the mission. If you can help him get his mission accomplished without adding stumbling blocks and impossible restrictions, you will have his support.

This last deserves additional comment. There are times when, for some reason, the squadron will perform some acts in a nonstandard manner, where there is a higher-than-necessary possibility of risk. Here the safety officer must ensure that if the decision has been made, and cannot be changed, that all personnel are aware of the increased risks and that supervisors in fact supervise to provide the **safest environment possible** under the circumstances. The classic example is ACM training. There are other simple, ordinary examples as well. Take GSE that is never 100 percent up. Are the personnel aware of the hazards? Is there an effective program to ensure that personnel are fully trained on the GSE gear, especially for malfunctions and emergencies, to preclude injury to themselves and damage to equipment? Are supervisors watching to make sure that material conditions do not degrade further and really *ensuring* that personnel adhere to proper procedures. If a pilot must be sent on a flight for which he is only marginally qualified, is this fact identified, and is there extra effort expended to ensure that the brief is more detailed than normal? Is the copilot or wingman aware, and watching closely, rather than letting things go too far on the assumption, "I thought he could hack it"?

Safety does not exist in a vacuum, but rather as part of the real world. It is the job of the safety officer to function in the real world, and provide the best environment that he can, given the constraints. A paper program won't save any lives or prevent injuries. A well balanced and integrated program will. ◄

Letters

Another Law!

Washington, DC – Expanding LCDR Beeler's list (APPROACH, AUG '79), we should add:

RYAN'S LAW – If it's working, don't fix it.

T. F. Kearns
AIR-320 NAVAIRSYSCOM

Re: "Progressive Systems Failures" APPROACH, SEP '79

NAS Moffett Field – The above article ends with the question, "When was the last time your squadron considered or practiced multiple emergencies and multiple systems failures?" The possible consequences of compound emergencies should certainly be emphasized in training, but NOT by practicing them in the aircraft. The VP-31 Flight Instructor Guide contains this guidance:

"It is imperative that the [Instructor Pilot] conduct all emergency simulations within the limits of aircraft performance and his own ability. *Simulated emergencies shall not be compounded.* Compounding simulated emergencies has the effect of unnerving the [student] and thereby decreases his ability to absorb further instruction. In addition to confusing the [student], a compounded simulated emergency might obscure an actual malfunction and thereby jeopardize the aircraft."

In other words, by compounding emergencies for training, we always increase the risk and rarely improve the training. Let's leave this sort of training for simulators and "what if" discussions. Otherwise, we're liable to create real emergencies out of training situations.

LT Mark H. Crouter
VP-31

• LCDR Schwoerer's article was advocating practice of compound emergencies in a simulator or operational flight trainer. Most aircraft NATOPS manuals prohibit compounding simulated emergencies in flight.

Re: "A Near Rollover"

Washington, DC – In reference to the article entitled "A Near Rollover," which appeared on pg. 15 of the SEP '79 APPROACH, one cannot argue with success, nor do I contend that the action taken was improper. However, the article states, "... enabled him to recognize that the tipover angle had been reached ..." and implies that under that condition, the addition of power allowed the aircraft to be flown from the deck. If the *dynamic* tipover angle had been reached, the application of power would have resulted in a lifting vector inside of the starboard main landing gear, increased the moment about that point, and caused the aircraft to roll over. The reason for success in this incident is that the dynamic tipover angle had not been achieved. Pilots must be aware that collective does control the rollover angle once the lateral control stops are reached: down collective to level the aircraft; up collective to roll over.

Maj J. B. Gartman
NAVAIRSYSCOM

• Several other sharp Fleet pilots also pointed out that the helicopter could not have reached the dynamic rollover point at the time of power application. If that had been the case, application of power would have resulted in aggravating the roll rate, and the helicopter would not have recovered. Our apologies for any confusion on this matter.

Re: "Want to Buy a Farm?"

FPO, New York – As a fellow "CV" helo driver, "Want to Buy a Farm?" (OCT '79 APPROACH) sounds all too familiar. As so often stated in safety publications, planning and sound decisions are the basic essentials for safe flight operations. Incidents similar to this one have occurred far too frequently. I'll not attempt to armchair quarterback the mistakes leading up to this incident. I cannot, however, agree with the author's statement, "The pilot in 731 could have switched radios and called the aircraft approaching, stating, 'A helo is on deck and will remain, expect a waveoff, acknowledge,'" as a prudent course of action for the helo pilot in helping to prevent the incident.

The air boss is responsible for overall control of the flight deck. The helo pilot's transmission could further confuse the situation or interrupt a transmission from land/launch, paddles, or CCA to the inbound aircraft. Standard operating procedure for a helicopter on deck during refueling/launching evolutions is to monitor land/launch and Departure Control, thus missing CCA's calls.

We in the helicopter community have restrictions (NATOPS/CV NATOPS) imposed on us to ensure safe handling/operation of our aircraft. Like all communities, we expect to be launched/recovered within these prescribed

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

parameters. Preventing an aircraft mishap by simply taking it around, and safely clearing a fouled deck, is decidedly worth the extra time and effort.

LCDR D. A. Yesensky
HS-7

Re: "Rappelling"

APO, Seattle – In reading the article written by C. B. Weisiger on helicopter rappelling, JUL '79 APPROACH, I noticed several problem areas, most of which deal with equipment usage. These problem areas, if allowed to continue, may lead to injuries more severe than fractured heels.

The first problem noticed was the use of a piece of equipment called the Sky Genie, and was referred to as a "standard piece of mountain climbing equipment." This piece of equipment, to the best of my knowledge, is not a "standard piece of equipment," and after reading how it works (and the many variables which can affect its proper function), I can safely say that this is a definite weak link in the rappel system used here. Second, the use of a single rope for rappel, instead of a double rope, is a practice that is not condoned in any SAR operation, especially without the use of a belay. Third, the use of the rescue hoist for an anchor is, in fact, inviting disaster by relying on another mechanical device within an already complicated and questionable system . . .

Considering the many "weak links" used during helicopter rappelling shown here, it is suggested that a thorough review be made of the operating procedures used. This review should cover, as a minimum, technique and equipment used.

Please feel free to use any or all of this letter and my name in your publication. If any additional information is needed and I can be of some assistance, please contact me at Autovon 572-3474 in Shemya.

SSgt Eugene F. Young, USAF

NS Rota – I read with interest the article "Rappelling" in the JUL '79 issue. I feel I should make a few comments, having recently been stationed at NAS Lemoore, CA.

The rappelling device, brand name Sky Genie, is not really a standard piece of mountain climbing equipment. Most mountaineers prefer carabiners or figure eights for rappelling . . .

Sky Genie ropes are usually either 100 feet in length or 250 feet, not 300 feet.

The proper number of wraps of the Sky Genie bail does depend on the weight of the rappeller; however, for helicopter rappelling, a minimum number of wraps is considered to be two-and-a-half . . .

The rappeller's hand should always be palm-up, not palm-down, so that he can easily apply his grip to the rope while descending, to control his rate of descent. If his lower hand is palm-down, he runs the risk of dropping the rope during the rappel. A dropped rope would result in an uncontrolled descent. The rappeller pictured has his hand improperly placed! By having palm up, the rope can be lifted for an emergency brake . . .

LCDR Scott Gordon

● Both of these letters are correct in that the Sky Genie is not a standard piece of mountain climbing equipment.

In reference to LCDR Gordon's letter, there exists one major difference between NAS Fallon's and NAS Lemoore's SAR procedures – that of the palm-up and palm-down method of descent. Conversations with Mr. Lew Himmelrich, Vice President of Sky Genie, and Mr. Terry Lewmeister, rappel instructor for the U.S. Forest Service Smoke Fighters, Pacific Northwest Region, indicate the preferred method of using the Sky Genie is palm down. The rappeller involved in the incident on which the article was based was using the palm-up method at the time of the incident. Also, one-half-inch Sky Genie rope can be purchased in any length between 50 and 700 feet.

In reference to SSgt Young's letter, the Sky Genie is used in Navy SAR because it is superior for the cliff/short-haul rescue typically encountered. The use of the hoist boom as an anchor is approved by NAVAIRSYSCOM. The UH-1N hoist post and boom assembly is capable of supporting 600 pounds. A belay rope is used during a cliff/short-haul rescue, and is attached to at least three deck fittings, each capable of supporting 500 pounds parallel.

Smoking and Aviating

NAS Barbers Point – For several years now the disadvantages of smoking have been accurately and extensively exposed.

Perhaps the most significant single statement, with respect to the dangers of smoking, was included in the Surgeon General's Report of the Advising Committee in January 1964:

"Cigarette smoking is a health hazard of sufficient importance in the United States to warrant remedial action."

The importance of this public announcement by one of our Government's most respected bureaus drew a great deal of attention. It also helped to launch the great "No Smoking" campaign by those of us who desire to protect our health from any and all risk elements.

Since that time, studies have correlated smoking with several diseases, including:

- Cancer.
- Cardiovascular disease.
- Chronic respiratory diseases.
- Fetal and neonatal mortality rates (a result of pregnant women smokers).

Nonsmokers find it difficult to appreciate why others smoke. The most common reasons given by smokers include:

- Enjoyment of the effects and/or the process (handling cigarettes, pipe, or cigar; putting something into the mouth; watching the smoke; etc.).
- Parents smoke.
- Friends or peers smoke.
- Smoking is a status symbol.
- Cigarette advertising.
- A "need" for the nicotine.
- A means of weight control ("quitters" often gain weight).

I would like to add one reason not to smoke and address it specifically to aviators:

A recent mishap included excessively high carboxyhemoglobin level in the pilot (he smoked 2½ packs of cigarettes per day) as a possible contributing factor to his slow reaction abilities. His aircraft (with another aviator aboard) struck a tree at low level and extremely high speed. The insinuation was that the pilot's reaction time was not what it might have been if he had not been a smoker.

I can't think of a better reason for an aviator not to smoke – your own life and possibly the life or lives of your crew! Need more be said?

LT Bill Short, USN
VP-4

● According to a National Institutes of Health study done in 1978, nicotine as well as carboxyhemoglobin can adversely affect a pilot's reaction time. ◄

DIVERSION

THE SH-2F crew launched late one afternoon on a routine training flight. After the first half of the flight, they landed, hot refueled, and the pilots changed seats. About 1900 they returned to the ship to shoot some night landings.

CIC advised the pilots there was some weather activity about 15 miles away but, on the scope, it merely looked like showers. Further, neither visual nor radar pictures indicated anything but rain. The ship had been cruising in areas free of showers, except for one period of light rain earlier in the evening.

The first approach to landing was normal, and they launched for another. They also decided the next one would be the final landing, as weather appeared to be closing in. They checked with CIC, who reported light rain activity about 7 miles ahead of the ship.

While on final approach the pilots were greatly surprised, as they reached one-quarter of a mile, to have the wind shift from 330/5 knots to 090/35 and gusty. One moment the ship was in plain sight and the next moment it was engulfed in a heavy rain squall and visibility went to zero. The HAC waved off in heavy rain and turbulence, and headed for a clearer area. While vectoring for another approach, the helicopter experienced severe turbulence. In fact, momentarily, the helicopter was almost out of control. The aircraft made a 180-degree left turn even though the turn and bank gage was pegged full right. The helicopter may have been affected by a waterspout embedded in the storm.

The HAC declared an emergency and flew out of the squall. The ship's CO altered course and ordered flank speed to get into a clearer area. The HAC advised he wasn't about to enter the squall for a third time, and, to complicate matters, the helicopter's low fuel light illuminated.

Earlier, the pilot had been given vectors of 090/16 miles to the beach, and since he had already decided not to try another approach with the ship in the middle of a squall, he headed through moderate to heavy rain for the coastline. He had plenty of help – the ship's vectors were accurate, he had local area maps and his own radar. The HAC found an open area on the beach and landed with 150 pounds of fuel remaining.

The cause of the diversion had been the unexpected heavy squall and severe turbulence. Their reentry into turbulence on the second attempt, the uncontrolled 180-degree change in heading, and then the low fuel warning light turned the situation into an emergency which meant only one thing – divert!

PRC-90 radios were used to communicate with the ship and to confirm that they were safe. Later, 600 pounds of fuel were delivered to them by another helicopter. They refueled, launched, and returned to the ship without any more problems. ◄

 ☆U. S. GOVERNMENT PRINTING OFFICE: 1979—635-048/16

SPOTAN

Know it backwards

NATOPS

and forwards!

Poster idea contributed by LT A. P. Clouse, VP-48, ASO

Happy Holidays!

If statistical trends hold, we'll have about 70 more people alive for the holidays this year than we would have had if last year's fatality rates had prevailed.